

ROKHLIN, L.L. (Moskva)

Differentiation of the states of hypochondria. Trudy Gos. nauch.-  
issl. inst. psikh. 40s65-79 \*63 (MIRA 17s7)

ALEKSANDROVSEIY, Anatoliy Borisovich [deceased]; ROKHLIN, L.L.,  
prof., red.; ALEKSANDROVSKIY, Yu.A., red.

[Relapses of schizophrenia and ways of their prevention;  
clinical and physiological study] Retsidivy shizofrenii i  
puti ikh profilaktiki; kliniko-fiziologicheskoe issledova-  
nie. Moskva, Izd-vo "Meditsina," 1964. 209 p.

(MIRA 17:7)

FEDOTOV, D.D., prof., etv. red.; VRONO, M.S., red.; SEYANOV, V.Ya., red.; LAPIDES, M.I., red.; MAMTSEVA, V.N., red.; YURKOVA, I.A., red.; NOVLANSKAYA, K.A., red.; ROKHLIN, L.L., red.; SKANAVI, Ye.Ye., red.

[Problems of pediatric psychoneurology] Problemy psikhonevrologii detskogo vozrasta. Moskva, 1964. 530 p.  
(MIRA 18:5)

1. Moscow. Gosudarstvennyy nauchno-issledovatel'skiy institut psikhiiatrii. 2. Klinika psikhozov detskogo vozrasta Gosudarstvennogo nauchno-issledovatel'skogo instituta psikhiiatrii Ministerstva zdavookhraneniya RSFSR (for Skanavi, Lapides). 3. Kafedra detskoy psikhiiatrii Tsentral'nogo instituta usovershenstvovaniya vrachev (for Novlyanskaya, Mamtseva, Vrono).

ROKHLIN, L.L. (Moskva)

S.S.Korsakov and the problem of consciousness. Zhur. nevr. i psikh.  
vol. 64 no.5:778-782 '64. (MIRA 17:7)

ACC NR: AP6036443

SOURCE CODE: UR/0370/66/000/006/0114/0120

AUTHORS: Drits, M. Ye. (Moscow); Sviderskaya, Z. A. (Moscow); Rokhlin, L. L. (Moscow)

ORG: none

TITLE: Effect of alloying and of thermal treatment on the extinction of ultrasonic vibrations in magnesium alloys

SOURCE: AN SSSR. Izvestiya. Metally, no. 6, 1966, 114-120

TOPIC TAGS: magnesium alloy, calcium ~~containing~~ alloy, rare earth, ~~containing alloy~~, ultrasonic vibration, ultrasound absorption

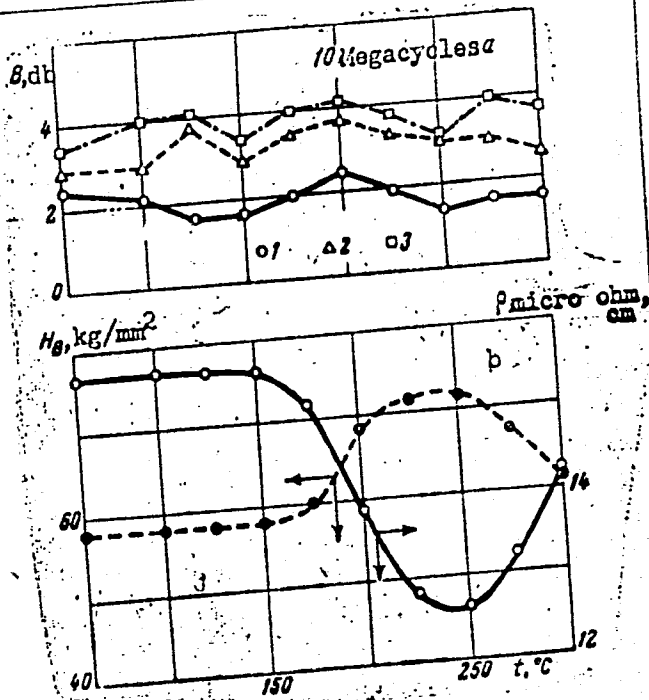
ABSTRACT: The effect of adding calcium and mischmetal (98% rare earth metals containing 46% Ce), respectively, to magnesium on the scattering and extinction of supersonic waves in the alloy was determined. In addition, the effect of different thermal treatments of the alloy on the extinction of supersonic vibrations was investigated. The study supplements the results of D. P. Lovtsov, V. P. Sizov, and A. G. Spasskiy (Vliyaniye usloviy lit'ya na zatukhaniye ul'trazvuka v metallakh. Izv. VUZov, Tsvetnaya metallurgiya, 1958, No. 3, 127). The alloy specimens were prepared after the method of Lavrov. A schematic of the experimental installation for the determination of ultrasonic absorption is presented. The microstructure, hardness, and electrical resistance of the specimens were correlated with the ultrasonic absorption of the latter, and the experimental results are presented graphically (see Fig. 1).

UDC: 669.721.5

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ACC NR: AP6036443

Fig. 1. Dependence of the extinction of ultrasound (a), hardness and specific electrical resistance (b), respectively, of alloy Mg + 8% Al on the aging temperature (initial state—after quenching); length of specimen during ultrasonic extinction measurements: 1 - 50, 2 - 85, 3 - 125 mm



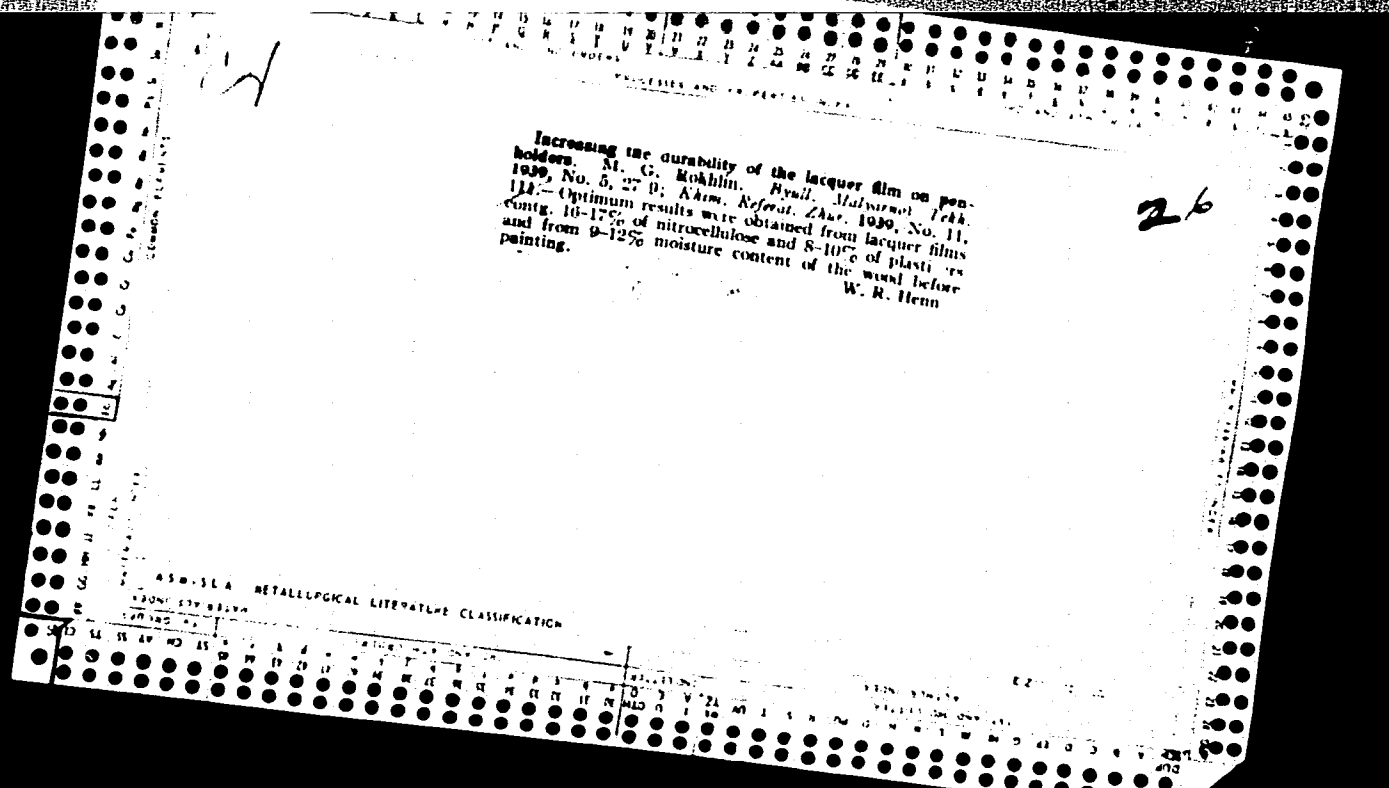
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ACC NR: AP6036443

It is concluded that the extinction of ultrasonic vibration in these alloys is a function of the grain size of the latter (the extinction is smaller—the smaller the grain size). The formation of small amounts of fine-grained intermetallic compounds has no noticeable effect on the extinction of ultrasonic vibrations. Orig. art. has: 6 tables and 2 equations.

SUB CODE: 11/ SUBM DATE: 18Feb65/ ORIG REF: 005/ OTH REF: 003

Card 3/3



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Using cresol-alkyd varnish under plant condition. M. G. Rokhlin. *Byull. Malyarnol Tekh.* 1930, No. 8, 12-13. *Khim. Referat. Khim.* 1940, No. 3, 95. Cresol-alkyd varnish films on automobiles were preserved perfectly after 4 months' standing in the open air. The varnish possesses a disagreeable odor. W. R. Henn

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																																																			
<p><b>7657* Protecting Iron From Atmospheric Corrosion by Oil Coatings.</b> (In Russian.) A. Ya. Drinberg and M. G. Rokhlin. <i>Zhurnal Prikladnoi Khimii</i> (Journal of Applied Physics), v. 24, Feb. 1951, p. 210-214.</p> <p>Experiments are described on production of different oils and unpigmented coatings and testing them with respect to the above. Oils studied include tung oil, linseed oil, and cottonseed oil. Effects of aging up to 6 mos. are investigated. Results are tabulated.</p>																																																			
<p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			
1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									

C.A.

24

( Polymerization and drying of oils and esters of fat acids.  
XI. Changes of elementary composition of oil films under  
various regimes of drying. A. Ya. Dvinberg and M. G.  
Rohblin (Leningrad Tech. Inst., Leningrad). *Zhur. Priklad.  
Khim.* (J. Applied Chem.) 30, 230-2 (1951); cf. C.A. 35,  
4815; 41, 1113c.—Films of linseed oil and linseed-penta-  
erythritol esters were examd. after 6 months of natural dry-  
ing and 24 hrs. of accelerated test drying. The accelerated  
drying leads to greater loss of material wt. and the films  
are more crumbly. Uptake of O by linseed oil is greater in  
the natural drying (11.2%), while in the accelerated test  
a drop (apparent) of 3% O takes place; pentaerythritol  
films give similar results although their O content is some-  
what higher. Anticorrosion properties after any form of  
ageing are best for the pentaerythritol derived products.  
No direct connection between anticorrosion protection and  
mech. properties of the films could be found. G. M. K.

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CA

Protecting iron against corrosion under atmospheric conditions by coatings of oil. A. Ya. Drinberg and M. G. Rokhlina (Inst. Tech., Leningrad). *J. Applied Chem. U.S.S.R.* 24, 227-32 (1951) (Engl. translation).—Three vegetable oils were used in the expts.: tung oil, linseed oil, and cottonseed oil. The phys. characteristics of each and their measurement are described. The paint vehicles were prepd. by mixing the siccative with the slightly heated (40-50°) oil in such proportions that they all contained the equiv. of 0.13% of metallic Co. The times for drying completely are shown in tables. The tung oil paint vehicle was most resistant after 210 hrs. but changed markedly after 420 hrs. The film produced by cottonseed pentaerythritol gave the best, that of tungsten oil the worst results. Films produced by pentaerythritol esters resist corrosion better than films produced by vegetable oils.

M. Hartenbeim

CA

Polymerization and drying of oils and esters of fat acids.  
XI. Changes in the elementary composition of oil films  
during various aging procedures. A. Ya. Drinberg and  
M. G. Rokhlin (Leningrad Inst. Technol., Leningrad). J.  
Applied Chem. U.S.S.R. 24, 239-42 (1951) (Engl. transla-  
tion).—See C.A. 46, 1296d. R. M. S.

KRENTSEL', Boris Abramovich; ROKHLIN, Maks Isaakovich; TARASENKO,  
V.M., red. izd-va; POLYAKOVA, T.V., tekhn. red.

[New chemistry and its raw material resources] Novaia khi-  
miia i ee syr'evaia baza. Moskva, Izd-vo Akad. nauk SSSR,  
1962. 103 p. (MIRA 15:7)

(Chemistry, Technical)

177761

USSR/Chemistry - Corrosion

Feb 51

"Brief Communications: I. Protection of Iron from Corrosion Under Atmospheric Conditions With Oil-Base Coatings. II. Protection of Iron from Corrosion With Oil-Based Coatings and the Change in the latter's Physical Properties with Aging. III. Change in the Elementary Composition of Oil-Based Coating Films Under Different Regimes of Aging," A. Ya. Drinberg, M. G. Rokhlina, Leningrad Tech Inst Imeni Lensovet

"Zhur Prikl Khim" Vol XXIV, No 2, I-pp 210-214, II-pp 215-220, III-pp 220-222

177761

USSR/Chemistry - Corrosion (Contd)

Feb 51

Brand aging properties of anticorrosion coatings for iron based on linseed, cottonseed, and tung oils and their pentaerythrol esters.

177761

ROKHLIN, M. G.

ROKHLIN, M. I.

(DECEASED)

1963/3

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ROKHLIN, M.I.

Urgent tasks in the production of chemicals for plant protection.  
Khim.prom. no.8:449-453 D '55. (MLRA 9:5)  
(Agricultural chemicals)

ROKHLIN, M.I.

Symposium on macromolecular chemistry. Plast.massy no.7:1-2 '60.

(MIRA 13:10)

(Macromolecular compounds--Congresses)

S/064/60/000/0011  
B020/3054

AUTHOR: Rokhlin, M. I.  
TITLE: International Symposium on Macromolecules  
PERIODICAL: Khimicheskaya promyshlennost', 1960, No. 7, pp. 85 - 86

TEXT: The International Symposium on Macromolecules, which is now taking place every year, was held in Moscow on June 14-18, 1960. These symposia are organized by the Commission on Macromolecules of the International Association of Pure and Applied Chemistry. Only problems of the chemistry of high-molecular compounds were dealt with. Chemists from 26 countries attended the conference. 846 people from the Soviet Union were present, including collaborators of institutes of the Academy, schools of higher education, and various scientific organizations and plants, various authorities, and various sovmarkhoz. 570 foreign delegates attended the Symposium. 85 collaborators of institutes of the Academy of Sciences, schools of higher education, and industry came from the Czechoslovakian Socialist Republic. The delegation was headed by Academician O. K. Wichterle. 81 delegates from Eastern Germany,

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...skoy fiziki  
... A. V.  
... read at the  
... new polymers were dealt  
... Reports by Ye. A. Mushin  
... polymers of increased thermal  
... akutin, L. A. Radivilova, and N. V. Mikhaylova

KRENTSEL', B.A.; ROKHLIN, M.I.; SMIRNOV, V.S.

International symposium on macromolecular chemistry. (Wiesbaden  
West Germany)... Vysokom. soed. 2 no. 3:473-478 Mr '60.

(MIRA 13:11)

(Macromolecular compounds--Congresses)

ROKHLIN, M.I.

International Symposium on Macromolecules. Khim. prom. no. 7:613-  
614 O-N '60. (MIRA 13:12)  
(Macromolecular compounds--Congresses)

ROKHLIN, M.I.

International Symposium on Macromolecular Chemistry. Zhur. VKHO 5  
no.6:684-686 '60. (MIRA 13:12)  
(Macromolecular compounds--Congresses)

ROKHLIN, M.M.

International Symposium on the Problems of the Chemistry and  
Physics of High Molecular Weight Compounds. Kauch.i rez. 19  
no.5:56-57 My '60. (MIRA 13:7)  
(Macromolecular compounds--Congresses)

S/025/60/000/009/003/009  
A/166/A029

AUTHOR: Rokhlin, M.I., Scientific Secretary on Polymers in the  
Chemical Department of AS USSR

TITLE: International Symposium

PERIODICAL: Nauka i zhizn', 1960<sup>27</sup>, No. 9, pp. 28 - 30

TEXT: The International Union of Pure and Applied Chemistry's 1960 Internatsional'nyy simpozium po makromolekulyarnoy khimii (International Symposium on Macromolecular Chemistry) was held in Moscow from 14 - 18 June 1960 and was attended by 570 foreign delegates, including 85 from Czechoslovakia and 85 from Hungary. Soviet participation numbered 567 (with guests almost 850). Three papers were presented at the plenary sessions, including one by Academician N.N. Semenov (USSR) on "Collective Interactions in the Processes of Polymerization at low Temperatures and in Polymers with Conjugate Bonds." The symposium was divided into 3 sections: 1) synthesis of polymers; 2) polymerization and polycondensation processes; and 3) chemical conversions in polymer chains. The sections heard 13 introductory papers summarizing the general state of knowledge and research in the particular

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S/025/60/000/009/003/009  
A/166/A029

International Symposium

field and 159 reports on the results of experimental work. The Soviet papers presented were: K.A. Andrianov on "Polymers with Inorganic Chains in the Molecules"; M.M. Koton on "Ways of Synthesizing New Polymers with Chain Cycles"; A.V. Topchiyev on "Catalytical Polymerization with Oxide Catalysts"; A.A. Berlin on "Polymers with Systems of Conjugate Bonds and Heteroatoms in the Conjugate Chain"; Z.A. Rogovin on "New Methods of Modifying the Properties of Cellulose and other Polysaccharides." The symposium also included a special day devoted to discussion of the basic trends of polymer chemistry.

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S/030/60/000/05/15/056  
BO:5/B008

AUTHORS: Kargin, V. A., Krentsel', B. A., Rokhlin, M. I., Smirnov, V. S.

TITLE: International Symposium on Macromolecular Chemistry and the Exposition of Synthetic Materials in the German Federal Republic

PERIODICAL: Vestnik Akademii nauk SSSR, 1960<sup>3r</sup> No. 5, pp. 68-74

TEXT: The Symposium was convened by the Commission of High-molecular Compounds of the International Association for Pure and Applied Chemistry and was held at Wiesbaden (German Federal Republic) from October 12 to 17, 1959. It was attended by some 1200 scientists from 22 countries. The Soviet delegation consisted of 29 representatives of the main branches of the chemistry and physics of polymers of the USSR. Problems of the physics of the polymers, high-molecular compounds in solutions, the elementary acts as well as the kinetics of polyreactions, the chemistry of organic and inorganic high-molecular compounds, the natural high-molecular compounds and models were discussed. G. P. Mikhaylov ✓

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International Symposium on Macromolecular  
Chemistry and the Exposition of Synthetic  
Materials in the German Federal Republic

S/030/60/000/05/15/056  
B015/B008

reported on the investigation results of the molecular relaxation in polymers by means of the dielectric method. V. A. Kargin stated that the globules are to be considered as primary elementary structures in the orientation and crystallization of polymers. S. S. Medvedev showed that the development of cationic chains is directly linked with the formation of complexes between the catalyst and monomer. G. Mark (USA) mentioned in his report papers by Soviet scientists, especially the investigations by K. A. Andrianov in the field of the synthesis of organosilicon polymers. The authors describe next the International Exposition of Synthetic Materials which was held at Duesseldorf from October 17 to 25, 1959, and at which 21 countries (over 670 firms) were represented. The authors state that about one half of the exhibits consisted of machines and the other half of finished products. Among synthetic materials, polyvinyl chloride, polyethylene and reinforced plastics are especially mentioned, the authors referring to the papers by V. A. Kargin and N. A. Plate. It is underlined finally that the work of the experts in the field of new processing methods is to be regarded as being as important as the creation of new polymers. There is 1 Soviet reference.

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S/030/60/000/009/002/016  
B021/B056

AUTHORS: Kargin, V. A., Academician, Rokhlin, M. I.  
TITLE: The Development of Science From Polymers (Results of the  
International Symposium on Macromolecular Chemistry in  
Moscow)

PERIODICAL: Vestnik Akademii nauk SSSR, 1960, <sup>vol 30</sup> No. 9, pp. 18 - 23

TEXT: The International Symposium on Macromolecules took place in Moscow from June 14 to June 18, 1960. It was organized and carried out by the Akademiya nauk SSSR (Academy of Sciences USSR) under participation of the Gosudarstvennyy komitet Soveta Ministrov SSSR po khimii (State Committee for Chemistry of the Council of Ministers USSR). Three reports were made in plenary sessions, and 173 lectures were delivered in three sections. The first plenary session was opened by V. A. Kargin. New data and hypotheses concerning the most important chemical processes predetermining the character of some types of polymerization were given by N. N. Semenov. M. M. Koton reported on methods of increasing the thermal resistivity of polymer products; K. A. Andrianov spoke about the stage of investigations

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The Development of Science From Polymers  
(Results of the International Symposium on  
Macromolecular Chemistry in Moscow)

S/030/60/000/009/002/016  
B021/B056

of the synthesis of inorganic polymers; A. V. Topchiyev on new experimental data concerning the use of oxidation catalysts for the polymerization of olefines; A. A. Berlin on new ways of synthesizing polymers; Z. A. Rogovin on methods of modifying the properties of cellulose and other polysaccharides. The authors find that Soviet scientists ought to pay more attention to the working out of problems of the destruction and stabilization of polymeric substances. The production of apparatus and their improvement must be intensified. For the purpose of organizing large international conferences, premises of particularly modern equipment are necessary. The Dia-projectors of the type ЛЭТМ-55 (LETI-55) and the projector of the type ПЛЮ (PLU) are suggested as fundamental parts of the equipment. The erection of a modernly equipped conference building in Moscow is described as important. First of all, the conference rooms of the Presidium of the Academy of Sciences USSR, of the Institut organicheskoy khimii (Institute of Organic Chemistry), the hall of the Dom uchenykh (House of Scientists), and a number of halls of other institutions of the Academy must be modernly equipped for the purpose of organizing conferences. There is 1 Soviet reference.

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S/030/61/000/002/003/011  
B105/B206

AUTHOR: Rokhlin, M.I.

TITLE: Research of Soviet and Czechoslovakian chemists  
in the field of high-molecular compounds

PERIODICAL: Vestnik Akademii nauk SSSR, no. 2, 1961, 92 - 93

TEXT: According to an arrangement between the Akademiya nauk SSSR (Academy of Sciences USSR) and the Czechoslovakian Academy of Sciences, research by Soviet and Czechoslovakian chemists in the field of high-molecular compounds is directed towards the study of a number of important problems of science and production. In accordance with a joint plan for 1960, leading scientific institutions of the Otdeleniye khimicheskikh nauk Akademii nauk SSSR (Department of Chemical Sciences of the Academy of Sciences USSR) participated in the investigations: institut Vysokomolekulyarnykh sovedineniy (Institute of High-molecular Compounds), institut Khimicheskoy fiziki (Institute of Chemical Physics), institut Neftekhimicheskogo sinteza (Institute of Petrochemical Synthesis), institut Elemento-

Card 1/3

Research of Soviet and ...

S/030/61/000/002/003/011  
B105/B206

the 1961 plan were outlined. Good results were achieved in the production of polyformaldehyde and polypropylene as well as the investigation of the decomposition mechanism of polymer materials and the effect of various factors on the stability of polymers. The plan for 1961 provides for studies in the field of polyolefins, in order to determine the relation between the molecular structure and the properties of the most important representatives of this class. Studies are also planned for increasing the efficiency of catalysts for polymerization processes of the  $\alpha$ -olefins, and the investigation of their mode of action. The problem of the polyaldehydes is investigated on the example of solid polyformaldehyde. In the field of supermolecular structure of the polymers it was decided to investigate conditions and ways of establishing various types of structure, as well as the relation between the type of structure and the properties. Investigations are to be continued in the field of glass-reinforced plastics, fast polymerization of caprolactam, and production methods for initial materials of high purity as well as the control of their quality. ✓

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ROKHILIN, M.I.; SHITIKOV, V.K.

Polymer materials in medicine. Plast.massy no.9:44-46 '61.  
(MIRA 15:1)

(POLYMERS) (MEDICINE)

S/026/61/000/010/003/004  
D035/D113

AUTHORS: Kargin, V.A., Academician; Rokhlin, M.I.

TITLE: Polymers in 1990

PERIODICAL: Priroda, no.10, 1961, 38-48

TEXT: The authors review the development in polymer production during the last 25-30 years, indicate new trends in the synthesis of these materials and, discussing the qualitative improvements necessary for their universal application, roughly evaluate the importance of polymers during the next 20-30 years. The increase is due more to the development of new polymers, than to increased production of already known materials. Academician N.N. Semenov remarked that due to the development of polymers, man is no longer limited to the use of natural substances. Reviewing the most important polymer products, the authors underline that synthetic rubbers, particularly those with regular polyisoprene- or polybutadiene-based chains, are in some respects, even superior to natural rubber. Progress in synthetic fiber production is characterized by the transition from natural high-molecular compounds as starting materials to synthetic fiber-producing polymers such

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D035/D113

Polymers in 1990

as caprone, nylon, the polymers and copolymers of acrylic acid nitrile, etc. Synthetic fibers not only qualitatively compete with natural silk and wool, but the production costs of these materials are also 2-3 times lower. The production of synthetic leather and furs is also being developed. Synthetic glues have been widely adopted for glueing plywood, in the shoe industry, etc. They are now also being used in bridge construction. Films of polyvinyl chloride, polystyrene, etc., and in recent years films of polyethylene and polypropylene have been used as electroinsulators and on a still larger scale as packing materials. Ion-exchanging resins, i.e. high-molecular compounds capable of exchanging active ions for ions of dissolved electrolytes, are widely applied for purifying substances, separating precious metals, etc. The authors review the most important types of plastic materials. Improved plastics were developed for use in construction engineering, electrical and radio engineering, etc. Fluoroplastics, organosilicon resins and ~~plastics~~ have high thermal resistance. Reinforced plastics, particularly glass plastics i.e. a composition of synthetic binders of the unsaturated polyester resin type and glass-fiber fillers exhibit great strength. Polystyrene, polyethylene terephthalate and organo-silicon compounds show good electroinsulating properties. Foam and porous plastics with a volumetric

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D035/D113

# Polymers in 1990

weight as low as  $0.01 \text{ kg/m}^3$  meet the special needs of the aircraft, ship-building, RR car building and automobile industries. Organic glass mostly obtained from polymerization products of methyl ester of metacrylic acid is now widely used. This glass is light, strong, permeable to ultraviolet rays and has good machinability. The authors further discuss previous and more recent methods of processing ethylene and the plastics derived from it. Epoxy resins and wood plastics impregnated with synthetic resins are also very important. With respect to the behavior of plastics during shaping, the authors distinguish two classes: (1) Thermoreactive plastics which become infusible and insoluble in the mold under heat and pressure, and thus cannot be reshaped further; (2) thermoplastics, i.e. plastics which can be softened by heat and thus reshaped many times. Plastics of the first class are based, for instance, on synthetic phenol-formaldehyde and amino-formaldehyde resins. Thermoplastics are represented by polyvinyl chloride, polyethylene, polystyrene, etc. During the last thirty years, the proportion of thermoplastics in plastics production has steadily been increasing. The authors discuss the development of copolymers, graft polymers and block-copolymers, in which individual properties of various polymers are combined in one new material. Recently, new polymerization methods made it possible to

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D035/D113

Polymers in 1990

obtain polymers with a regular molecular structure and a definite alternation of the links. This so-called stereospecific process gave good results. Stereo-regular polypropylene, for instance, shows high thermal resistance. One of the most important future trends in the development of polymers will be to increase their strength, i.e. maximum resistance to shock, bending, friction, etc. It is probable that in the near future chemical fibers whose specific strength exceeds that of steel in weight and volume, will be developed. The authors discuss two main methods by which the strength of polymers will be increased. The first consists in changing their macromolecular structure without changing their chemical composition whilst the second consists in improving reinforced systems and creating variously combined construction materials. Structural synthesis, reinforcement, processing methods not affecting the strength, and new types of binders and gluing substances will all help to make new types of strong light-weight ships, planes, machines, automobiles, houses, etc. The maximum thermal resistance of polymers presently used (250-350°C) can be raised by introducing links with inorganic components into the chain of the polymer molecule. However, really high thermal resistance (600-1000°C) can only be expected from polymers with an exclusively inorganic chain. However, as inorganic

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D035/D113

Polymers in 1990

polymers are brittle, their future use depends on the possibility of obtaining elastic products of the synthetic-asbestos type which may be used for the construction of rockets, space vehicles, etc. As high-molecular compounds, in particular those with conjugated bonds, have good semi-conductive properties, it may be possible in the future to obtain semiconductors in the form of fabrics, films, elastics, etc. The authors consider that formaldehyde, which can be obtained directly from natural gas, will be the most widely produced plastic. The difference between plastics and rubber will decrease, and methods will be found for producing articles from infusible and insoluble plastics which are now unworkable. The development of the production of polyisoprene, polybutadiene, elastomers based on polyolefines and polyurethanes and the synthesis of heat-proof elastomers containing boron, phosphorus, etc., will increase the variety of synthetic rubbers in the next decades. The search for elastomers in saturated compounds will make it possible to eliminate their basic shortcomings such as high oxidability and sensitivity to light. Tires will become more durable and cheaper. The present complicated method of producing rubber items will possibly be replaced by methods of precision casting. The authors consider that synthetic fibers will eventually replace natural raw materials, except cotton, which,

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D035/D113

Polymers in 1990

however, will only be used in a chemically improved form. Porous materials will be used for clothing. Materials for lacquer coatings top the list in polymer production. The authors assume that in the next decades coatings for metals will be based entirely on water-soluble synthetic binders and water-diluted emulsions. The authors underline the growing importance of polymers for construction engineering, machines, agriculture, transport and equipment for space ships. Household items will be largely made of polymers. Polymers will also play an important role in medicine, biology, hygiene (purification of water), and photography. There are 5 figures. ✓

Card 6/6

KARGIN, V.A., akademik; ROKHLIN, M.I.

Problems in working plastics. Vest.AN SSSR 31 no.5:89-93 My '61.  
(MIRA 14:6)

(Plastic industry)

S/030/62/000/010/001/007  
D204/D307

AUTHORS:

Topchiyev, A. V., Academician, and Rokhlin, M. I.

TITLE:

The present state of polymer chemistry. Some results and perspectives of the work carried out in the Institutes of the Academy of Sciences in the field of high molecular compounds

PERIODICAL: Akademiya nauk SSSR. Vestnik, no. 10, 1962, 7-17

TEXT: A summary of the work carried out by the AS USSR in the period 1958 - 1962, following a directive from Khrushchev. The USSR now leads in the fields of synthesis of temperature resistant elemental organic compounds; investigations on the structure and preparation of polymers (particularly at low temperatures), production of polymers possessing new electrical and magnetic properties, study of telomerization reactions, and others. This theme is expanded with reference to the results obtained by the various institutes, concluding that very considerable progress has been made. The studies carried out on the kinetics, mechanisms of polymerization,

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D204/D307

The present state of ...

and on the relationships between structures and properties of polymers are considered to be particularly useful. The work on plasticizers, fillers, treatment with surface-active agents, physicochemical properties of polymers, and methods of testing and exploitation is also mentioned. The chief organizations quoted in this connection are the Institut elementoorganicheskikh sovedineniy, Neftekhimicheskogo sinteza, Vysokomolekulyarnykh sovedineniy, and Institut khimicheskoy fiziki (Institutes of Elemental Organic Compounds, Petrochemical Synthesis, High Molecular Compounds and Chemical Physics). Some examples of the directions followed by various institutes are given in illustration, including the work on polyolefins, semiconducting polymers, insulators and natural products of high molecular weight. The necessary large increase in the number of workers devoted to this program is described; it is considered that the effort is, however, still insufficiently coordinated. The following subjects for further studies have been recommended: 1) mechanisms of the decomposition of polymers under the influence of various factors, 2) purity and large scale preparation of starting materials used in synthesis, 3) treatment and testing of

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The present state of ...

S/030/62/000/010/001/007  
D204/D307

polymeric products, 4) synthesis of inorganic polymers, 5) synthesis of elastomers and other products, 6) search for new fundamental starting materials for synthesis.

Card 3/3

KARGIN, V.A., akademik; ROKHLIN, M.I., kand.tekhn.nauk

Principal tasks facing the chemical sciences. Vest. AN SSSR  
34 no. 1:3-9 Ja '64. (MIRA 17:5)

PANFILOVA, Z.Ye.; ROKHLIN, M.I.; RODIONOV, I.S.; FAUSTOVA, D.G.;  
GOL'DSHTEYN, D.S.; GORODINSKIY, S.M., red.; TIKHOMIROV,  
V.B., red.; FODOSHVINA, V.A., red.; VLASOVA, N.A., tekhn.  
red.

[Protective coatings in atomic engineering] Zashchitnye po-  
krytiia v atomnoi tekhnike; sbornik statei. Moskva, Gos-  
atomizdat, 1963. 183 p. (MIRA 16:12)  
(Shielding (Radiation))

ROKHLIN, M. I.

Rokhlin, Mark Isidorovich

[There, where the tents were; a geologists notebook] Tam  
gde byli iarnagni; zapiski geologa. Moskva, Sovetskaja  
Rossiia, 1961. 108 p. (MIRA 16:3)  
(Chukchi National Area--Description and travel)

ROKHLIN, M. I.

Development of research on polymer mechanics; results of the  
13th Conference on High-molecular Compounds. Vest. AN SSSR  
33 no.1:117-119 Ja '63. (MIRA 16:1)

(Polymers)

TOPCHIIYEV, A.V., akademik; ROKHLIN, M.I.

Present-day chemistry of polymers. Vest. AN SSSR 32 no.10:7-17  
0 '62. (MIRA 15:10)

(Polymers)

S/030/63/000/001/009/013  
B117/B106

AUTHOR: Rokhlis, M. I.

TITLE: Development of investigations on polymer mechanics (Results of the XIII Konferentsiya po vysokomolekulyarnym soyedineniyam (XIII Conference on High Molecular-weight Compounds))

PERIODICAL: Akademiya nauk SSSR. Vestnik, no. 1, 1963, 117 - 119

TEXT: The XIII Conference on High molecular-weight Compounds held in Moscow on October 8 - 11, 1962 was organized by the following institutions: Nauchnyy sovet po vysokomolekulyarnym soyedineniyam pri Otdelenii khimicheskikh nauk Akademii nauk SSSR (Scientific Council of High molecular-weight Compounds at the Department of Chemical Sciences of the Academy of Sciences USSR); Gosudarstvennyy komitet Soveta Ministrov SSSR po khimii (State Committee on Chemistry of the Council of Ministers USSR); Nauchnyy sovet po probleme "Sinteticheskiye materialy na osnove polimerov" pri Gosudarstvennom komitete Soveta Ministrov SSSR po koordinatsii nauchno-issledovatel'skikh rabot (Scientific Council for the Problem "Synthetic materials based on polymers" at the State Committee on the Coordination of Scientific Research Work of the Council of Ministers USSR); Vsesoyuznoye khimicheskoye

Card 1/3

S/030/63/000/001/009/013  
B117/B106

Development of investigations on...

obshchestvo im. D. I. Mendeleeva (All-Union Chemical Society named D. I. Mendeleev); Gosudarstvennyy komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee on Automation and Machine Building of the Council of Ministers USSR); Vsesoyuznyy sovet nauchno-tekhnicheskikh obshchestv (All-Union Council of Scientific and Technical Societies); Moskovskiy universitet (Moscow University). The Conference was attended by about 1600 delegates from 287 scientific research institutes, schools of higher education, planning and design organizations, and industrial enterprises, coming from 54 towns of the USSR. A. V. Tepchiyev opened the Conference and mentioned recent progress in the investigation of structural peculiarities of polymers, pointing to a relationship between their structure and their properties. This relationship was treated also by V. A. Kargin who complemented the theoretical deliberations with results of investigations. G. L. Slonimskiy analyzed the most important results of the modern statistical theory of high elasticity and of mechanical relaxation phenomena. At the first plenary meeting, G. M. Bartsnev reported on the "Nature and rules of polymer flow". Further work was done in five sections. The following problems were dealt with in the section "Theoretical fundamentals of elasticity, plasticity, and strength of polymers": supermolecular structures and their effect on mechanical properties of polymers;

Card 2/3

ROKHLIN, M.I.

Tin from the Chukchi National Area. Let. Sev. 3:58-71 '62.  
(MIRA 15:3)

(Chukchi National Area--Tin ores)

ROKHLIN, N. A.

✓ 2636\* (Russian.) Increasing the Durability of Ladles. Uve-  
lichenie Stoikosti Kovshet. N. A. Rokhlin. *Metallurg*, 1956,  
no. 10, Oct. 1956, p. 10-20. 1  
*Metall* Introduction of heavy lining for teeming ladles, permitting up  
to 11 melts.

ROKHLIN, N.A.

Spiral-type lining of 200-ton steel pouring ladles. Stal' 21 no.5:  
412 My '61. (MIRA 14:5)

1. Metallurgicheskiy zavod im. Dzerzhinskogo.  
(Smelting furnaces--Equipment and supplies)  
(Refractory materials)

BEYGUL, Ye.I.; ROKHLIN, N.A.

Modernizing steel-pouring ladles. Stal' 23 no.10:904-905 0 '63.  
(MIRA 16:11)

ROKHLIN, N. A.

*mate* 1186. Increasing the life of ladles.—N. A. ROKHLIN (*Metallurg.*, No. 10, 19, 1956).  
In Russian.

ROKHILIN, N.A.

Increasing ladle durability. Metallurg no.10:19-20 0 '56.

(MLBA 9:11)

1. Pomoshchnik nachal'nika martenovskogo tsekha no. 3 metallurgicheskogo zavoda imeni Dzerzhinskogo.

(Dneprodzerzhinsk--Open-hearth process--Equipment and supplies)

USSR / Pharmacology, Toxicology. Analeptics. V

Abstr Jour: Ref Zhur-Biol., No 18, 1958, 85137.

Author : ~~Rokhlin, N. N.~~

Inst : Not given.

Title : The Influence of Chinese Lemon on the Function of the Auditory and Vestibular Analyzers in Normal and Pathological States.

Orig Pub: In the collection, Materialy k izuch. zhen'shenya i limonnika, No 3, Leningrad, 1958, 181-183.

Abstract: Observations were carried out on 40 subjects with normal LOR-organs, in whom the cochlear and vestibular functions were within normal limits for the age group, and also on 80 patients suffering with chronic otitis, otosclerosis, and neuritis of the auditory nerve. Lemon seeds (L), ground to powder and placed in capsules, were given to patients in

Card 1/2

USSR / Pharmacology, Toxicology. Analeptics. V

Abs Jour: Ref Zhur-Biol., No 18, 1958, 85137.

Abstract: doses of 3-4 gm. The functions of the cochlear and vestibular analyzers, and also the hearing of speech by healthy persons, underwent no detectable changes under the influence of L. With pathological changes of the middle ear, there was a slight improvement of tone reception in 25-30 percent of cases. L did not influence the curve of the audiogram in neuritis of the auditory nerves and was only slightly effective in the treatment of deafness. -- V. V. Berezhinskaya.

Card 2/2

32

GLUBOKOVA, P.D., kand.med.nauk, ROKHLIN, N.N., assistant

Strumitis of the radix linguae. Vest.oto-rin. 20 no.4:100-101  
Jl-Ag '58 (MIRA 11:7)

1. Iz kliniki bolezney ukha, gorla i nosa (zav. - doktor med.nauk  
V.S. Lyande) Khabarovskogo meditsinskogo instituta.  
(TONGUE, dis.  
strumitis of radix lingue (Rus))  
(GOITER, case reports  
(same))

ROKHLIN, P.Sh.

Rapid liming of heavy hides. Leg. prom. 18 no.8:36-38 Ag '58.  
(MIRA 11:9)

1.Direktor Rybinskogo kozhervennogo zavoda.  
(Tanning)

<sup>H</sup>  
ROKLIN, R. M.

(3)

4214. UTILIZATION OF BURNT MINE REFUSE. ✓ Shifman, M.I.,  
Roklin, R.M. and Epstein, L.V. (Ugol (Coal), Jan. 1954, 21-24). Coal,  
sulphur and shale in mine refuse may cause spontaneous combustion and  
temperatures over 1000°C in tips. Some of the material remaining is  
partially clinkered and hard; in Donbass, the heat comes from anthracite  
and coking coal mines. It is used successfully as an underlayer below  
the foundation of motor roads, instead of sand or crushed stone. (L).

Fuel Abstracts

June 1954

Natural Solid Fuels:

Winning

ROKHLIN, N.N.

Improved design of the curtain in a glass furnace. Stek. i ker.  
19 no.1:30-31 Ja '62. (MIRA 15:3)

1. Konstantinovskiy zavod stekloizdeliy.  
(Glass furnaces)

BOBCHENYA, P.D., sekret, MEDICINSKOYE, Ye. ., kant.meditsinsk; BOBCHENYA, H.D.  
nach; GERASIMOVA, S.

Professor Vol'f Samuilovich Lianda. 1893 - ; on his 70th birthday.  
Vest. otorin. 25 no.5:105 S-LG '63. (MERA 17:4)

1. Zaveduyushchaya otorinolaringologicheskum otdeleniyem  
Khabarovskogo meditsinskogo instituta (for Gerasimova).

ROKHLIN, N.N.

Glass-container factories of England. Stek.l ker. 19 no.12:32-  
35 D '62. (MIRA 16:1)

(Great Britain--Glass factories)

ROKHLIN, N.N.

Clinical aspects of otogenous abscesses of the brain. Zhur. ush.,  
nos. i gorl. bol. 20 no.1:70-72 Ja-F '60. (MIRA 14:5)

1. Iz kliniki bolezney ukha, gorla i nosa (zav. - prof. V.S.Lyande)  
Khabarovskogo meditsinskogo instituta.  
(BRAIN--ABSCESS)

SHESTAK, N.A.; ROKHLIN, P.N.

Regenerative glass furnace with crosscurrent alignment of the flame.  
Stek. i ker. 19 no.1:12-14 Ja '62. (MIRA 15:3)  
(Glass furnaces)

114

Tetraethyl lead. S. Rokhlin and A. Starchevskaya  
*Farm. Zhur.* 16, No. 2, 207-210 (1941) Symptoms of  
poisoning, toxicology and distribution of Pb in the organs  
and blood.  
B. Guroff

ASB-31A METALLURGICAL LITERATURE CLASSIFICATION

ROKHLIN, S.,  
G. YUKHNOVSKII, Masloboino Zhirovoe Delo 10, No. 9-10,  
8-10 (1934)

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
ROKHLIN, S.																																																			
ca																										92																									
<p>Production of synthetic acids under low pressure  G. Yukhnovskii and S. Rokhlin. <i>Moskovskoe Zhurnale  Dela</i> 10, No. 9 10, 8-10 (1957); <i>Chimie &amp; Industrie</i> 36,  472. A study of the prepn. of org. acids by oxidation of  petroleum by air in the presence of a catalyst. Ca naph-  thenate gives better results than Mg naphthenate. By  oxidizing under 3-4 atm., the time of reaction can be re-  duced by as much as 500% without lowering the yield or  impairing the characteristics of the acids. Use of such  pressure considerably reduces the consumption of air re-  quired for oxidation. The optimum temp. is 110-15°; be-  low, the yield of saponifiable material is appreciably  smaller, and above, for the same amt. of saponifiable  substance, there is a relatively large amt. of gasoline-insol-  product. The optimum pressure is 3-4 atm.; higher  pressure increases the amt. of hydroxy acids without in-  creasing the yield; at lower pressures the yield is much  smaller.</p> <p>A. Paineau-Couture</p>																																																			
<p>43-514 METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

YERMILOV, A.A., inzh.; ROKHLIN, S.D., inzh.; KAN, K.V., inzh.; KOGAN, G.B.,  
KHAPAYEV, P.V., inzh.

Concerning S.S. Gadzhiev's article "Increasing the number of  
services connected to one 6 and 10 kv breaker." Energetik 6 no.4:3-7  
Ap '58. (MIRA 11:4)

(Electric power distribution) (Gadzhiev, S.S.)

ROKHLIN, S.A.

Mechanized cultivation of hops and side dressing methods. Trudy  
VNIIPP no.5: 177-195 '55. (MLRA 9:1)

(Hops)

1. ROKHLIN, S. A.
2. USSR (600)
4. Kok-Saghyz
7. Using a tractor to mark off fields for checkrowing kok-saghyz.  
Dost. sel(khoz. No. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

SOV-91-58-4-3/29

AUTHOR: Rokhlin, S.D., Engineer

TITLE: On the Article of S.S. Gadzhiyev "On the Increase of the Number of Consumer Lines Connected with One Common Switch of 6 and 10 kv" (Po povodu stat'i S.S. Gadzhiyeva "Ob uvelichenii chisla potrebitel'skikh liniy, podklyuchayemykh pod odin vyklyuchatel' 6 i 10 kv)

PERIODICAL: Energetik, 1958, Nr 4, pp 5-6 (USSR)

ABSTRACT: The circuits suggested by Engineer S.S. Gadzhiyev present difficulties of utilization as well as structural and economical advantages. The following disadvantages are given:

- a) difficulties in grouping the equipment of a unit comprising two, three or more line disconnectors (units of the "KSO", "KSD" and "KSO-2u" types cannot be utilized for this purpose);
- b) this system is not sufficiently flexible for switching-over operations. These disadvantages can be eliminated, e.g. the circuit diagram shown in figure 1 is fully or partly free from them because of the utilization of load switches as line disconnectors, which can be remote controlled by means of drives of the "PRA-12" and "PS-10" types. The service efficiency of these circuits depends on the 6 to 10 kv consumer network layout and the automation system being utilized. A great part of 1st category consumers must be connected with

Card 1/2

SOV-91-58-4-3/29

On the Article of S.S. Gadzhiyev "On the Increase of the Number of Consumer Lines Connected with One Common Switch of 6 and 10 kv

the individual units of the distribution network (Figure 2). If the common switch system comprises only lines of consumers having low responsibility, these lines are connected by means of ordinary disconnectors (Figure 3). The author of this article comes to the following conclusions: the circuits suggested by S.S. Gadzhiyev really produce an economical effect and must be utilized in 6 and 10 kv distributing systems; the use of load switches allows the remote control of any outgoing line, which can also be under load, from the control panel.

There are 3 circuit diagrams and 1 Soviet reference.

1. Switching systems--Effectiveness  
--Equipment
2. Electrical networks

Card 2/2

ROKHLIN, S.D., inzhener.

Operation of substations without permanent attendants.  
Prom.energ. 12 no.1:4-5 Ja '57.

(MLRA 10:2)

(Electric substations) (Automatic control)

1949, 1955.

VANNILIS, B. I. i ROMELIN, S. I.

34227. Kimiko-toksikologicheskoye issledovaniya Po delam ob otravleniyakh.  
Kriminalistika i Nauch.-Sudeb. ekspertiza. SB Z. Kiyev, 1949, c.  
249-70

SC: Knizhnaya Letopis' No 6, 1955

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																										1ST AND 2ND ORDERS																									
CO																										7																									
<p>Substitution of sodium sulfide for hydrogen sulfide in forensic analysis. S. S. Belyuski, S. I. Rokhlin, A. H. Startchev'ska and E. M. Shlosberg. <i>Fizm. Zhur.</i> 13, No. 2, 40-2 (1940). -- The use of solid Na<sub>2</sub>S in place of gaseous H<sub>2</sub>S is advocated. References. B. Gutell</p>																																																			
ASB-51-A METALLURGICAL LITERATURE CLASSIFICATION																																																			
GROUPS																																																			

ROKHLIN, S.L.

Method of estimating and calculating the indices of ore  
dressing plant operations. TSvet. met. 34 no.12:4-5 D '61.  
(MIRA 14:12)

(Ore dressing)

SOV/137-57-11-21874

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 11, p 4 (USSR)

AUTHOR: Rokhlin, S. L.

TITLE: Multi-stage Flotation of Finely Disseminated Oxidized Lead Sulfide Ores of the Mirgalimsay Deposit (Mnogostadial'naya flotatsiya tonkovkraplennykh sul'fidnookislennykh svintsovykh rud mirgalimsayskogo mestorozhdeniya)

PERIODICAL: Tr. N. -i. i proyekt. in-ta "Uralsmekhanobr", 1957, Nr 1, pp 52-70

ABSTRACT: An investigation is made of methods of increasing Pb extraction from the ores of Mirgalimsay which yield to flotation with difficulty. A study is made of the influences of fineness of grinding, the effects of various xanthates and of diethyldithiophosphate, the presence of concretions in various classes, and the dependence on aeration of the stability of the sulfide film created on the surface of  $\text{Na}_2\text{S}$  minerals oxidized by Pb. A multi-stage flotation flowsheet, with the maximum coarseness being that of the first-stage slime, followed by successive grinding of the flotation tailings until 85-90% is in the  $43 \mu$  undersize, and an intensification of the flotation process and stage-wise introduction of reactants is recommended. This made possible a 15-17% rise in Pb

Card 1/2

SOV/137-58-11-21874

Multi-stage Flotation of Finely Disseminated Oxidized Lead Sulfide Ores (cont.)

recovery, or in other words raised Pb recovery to 91.6% when the ore content of the Pb is 1.9%. Further improvement in the process is possible upon conversion to a 3-stage system and introduction of the new Mekhanobr flotation machines.

L. B.

Card 2/2

ROKHLIN, S.L.; PICHENYUK, Ya.D.

Influence of the rate of agitation and aeration of the pulp on recovery of oxidized lead mineral during flotation. TSvet.net.29  
no.12:20-26 D '56. (MLRA 10:2)

(Flotation)

Rokhlin, S. L.

27  
Development of multiple-stage copper and copper-zinc enrichment: F. I. Hagimyak and S. L. Rokhlin. *Doklady Akad. Nauk SSSR* 1956, No. 4, 17-19. — The Cu and Cu-Zn ores of the Urals contain minerals of about the same d. but of different hardness which result in either over or under sizing. The development of multistage enrichment treatment is essential. I. Bencowitz

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NAGIRNYAK, F.I.; ROKHLIN, S.L.

Development of multistep copper and copper-zinc enrichment in the  
Urals. TSvet.net. 29 no.4:17-19 Ap '56. (MLRA 9:8)

(Ore dressing)

(Ural Mountains--Zinc ores)

(Ural Mountains--Copper ores)

ROKHLIN, V

Rohlin, V. On dynamical systems whose irreducible components have a pure point spectrum. Doklady Akad. Nauk SSSR (N.S.) 64, 167-169 (1949). (Russian)

The author announces some further results of his study of measure-preserving transformations. In this note heavy use is made of the terminology and results of his preceding notes [same Doklady (N.S.) 58, 29-32, 189-191 (1947); these Rev. 9, 230] and of the exposition of the Hellinger-Hahn multiplicity theory as presented by the author in

collaboration with Plesner [Uspehi Matem. Nauk (N.S.) 1, no. 1(11), 71-191 (1946); these Rev. 9, 43]. Denote by  $\Sigma$  the class of all automorphisms  $T$  with the property that (almost) all their irreducible (metrically transitive) parts have pure point spectrum. If  $C$  is the generic symbol for the elements of the canonical decomposition space of some  $T$  in  $\Sigma$ , and if, for any irreducible  $T$  with pure point spectrum,  $G(T)$  is the group of proper values of  $T$ , then the function  $G_C = G(T_C)$  uniquely determines the automorphism type of  $T$ . Call a not more than countably valued numerical function measurable if it may be decomposed into single valued measurable branches; in this language a necessary and sufficient condition that a given function  $G_C$  arise from some  $T$  is that it be measurable. The second half of the note is devoted to a rather complicated characterization of the spectral behavior of the unitary operators induced by some  $T$  in  $\Sigma$ . As an application of his characterization the author mentions that if the spectrum of an automorphism of class  $\Sigma$  contains an absolutely continuous component, then it contains the Hellinger type of Lebesgue measure with infinite multiplicity. No proofs are given.

P. R. Halmos (Chicago, Ill.).

Source: Mathematical Reviews,

Vol

19 No.

7

Smul

ROKHLIN, V., elektromonter

Universal screwdriver. Na stroi. Mosk. 1 no. 11:25 N '58.  
(MIRA 11:12)  
(Screwdrivers)

ROKHLIN, V.

Rohlin, V. Homotopy groups. Uspehi Matem. Nauk. (N.S.) 1, no. 5-6(15-16), 175-223 (1946). (Russian)

This is an expository paper on the theory of homotopy groups, formulated for polyhedra, and based upon a completely equivalent but more "geometrical" definition of these groups than the one originally given by Hurewicz. A footnote explains that the paper appears as it was completed in 1940, with supplementary references to some subsequent literature [to 1943].

*L. Zippin* (Flushing, N. Y.).

Source: Mathematical Reviews,

Vol 10 No. 6

ROKHLIN, V., elektromonter

Automatic cutout switches for electric welding machines. Na stroi.  
Mosk. 1 no.11:25 N '58. (MIRA 11:12)

1. Stroitel'nyy uchastok-52 tresta Monstroy No. 13.  
(Electric welding--Equipment and supplies)  
(Electric cutouts)

ROKHLIN, V.

Rohlin, V. A "general" measure-preserving transformation is not mixing. Doklady Akad. Nauk SSSR (N.S.) 60, 349-351 (1948). (Russian)

If  $X$  is the unit interval and  $\mu$  is Lebesgue measure, then a one-to-one, measure-preserving transformation of  $X$  onto itself is called mixing if  $\lim_n \mu(T^n A \cap B) = \mu(A)\mu(B)$  for every pair  $(A, B)$  of measurable subsets of  $X$ ;  $T$  is called weakly-mixing if

$$\lim_n n^{-1} \sum_{k=1}^n |\mu(T^k A \cap B) - \mu(A)\mu(B)| = 0.$$

Let  $M$  be the set of all mixing transformations and let  $M^*$  be the set of all weakly mixing transformations; clearly  $M \subset M^*$ . The reviewer has shown [cf. Ann. of Math. (2) 45, 786-792 (1944); these Rev. 6, 131] that, with respect to a certain natural topology of the set of all measure preserving transformations, the larger class  $M^*$  is very large (i.e., is an everywhere dense  $G_\delta$ ); the author's principal result in this paper is that the smaller class  $M$  is very small (i.e., is of the first category).

P. R. Halmos (Chicago, Ill.).

Source: Mathematical Reviews,

Vol 9 No. 9

ROHLIN, V. A.

Plesner, A. I., and Rohlin, V. A. Spectral theory of linear operators. (II. Uspehi Matem. Nauk (N.S.) 1(11), no. 1, 71-191 (1946). (Russian)

[Part I, by Plesner alone, appeared in the same journal 9, 3-125 (1941); these Rev. 3, 210.] Part II comprises §§ 14-29, as follows: 14. Operator-valued measure. 15. Integrability with respect to spectral measure. 16. Functions of Hermitian operators. 17. Closed operators permutable with Hermitian operators. 18. Functions of permutable Hermitian operators. 19. Spectral analysis of unitary operators. 20. Closed operators. 21. Spectral analysis of normal operators. 22. Hellinger types. 23. Cyclic operators. 24. Orthogonal sums of Hermitian operators with pairwise independent maximal types. 25. Operators with simple spectra. 26. Multiple spectra. 27. The unitary invariants of Hermitian operators. 28. Generalized functions of a Hermitian operator. 29. The characterization of the functions of a Hermitian operator. There is an appendix which treats the Lebesgue-Stieltjes integral. (This is a polished presentation of more or less standard material, so arranged as to include the case of nonseparable complex Euclidean spaces.)

The discussion of unitary invariants in §§ 22-28, while basically the same as the known treatments (beginning with the original ones of Hellinger and Hahn), applies to the

nonseparable case and is made particularly clear by systematic use of lattice-theoretic concepts. The family of finite mass-distributions on the infinite line,  $-\infty < \lambda < \infty$ , (or, what is the same thing, the family of the corresponding cumulative distribution functions  $\rho$ ) falls into equivalence classes  $\bar{\rho}$  if two distributions are regarded as equivalent whenever each has a density-function with respect to the other. The collection  $R$  of all such classes (called Hellinger types) is partially ordered by putting  $\bar{\rho} \leq \bar{\sigma}$  whenever  $\rho$  has a density function with respect to  $\sigma$ ; and, indeed,  $R$  is found to be a countably-additive generalized Boolean algebra in which the relations  $\bar{\rho}_\alpha \neq \bar{0}$ ,  $\bar{\rho}_\alpha \cap \bar{\rho}_\beta = \bar{0}$  for  $\alpha \neq \beta$ ,  $\bar{\rho}_\alpha \leq \bar{\rho}$  imply that the totality of elements  $\bar{\rho}_\alpha$  is countable. Now, if  $A$  is a Hermitian (i.e., self-adjoint) operator in a fixed complex Euclidean space and  $E(\lambda)$  is its resolution of the identity, a single vector or, more generally, a set of vectors  $\{f_\alpha\}$  is said to be of type  $\rho \neq 0$  (with respect to  $A$ ) when  $(E(\lambda)f_\alpha, E(\lambda)f_\beta) = \delta_{\alpha\beta}\rho(\lambda)$  for all  $\alpha, \beta, \lambda$ . The maximal systems of type  $\rho$  all have the same cardinal number, called the multiplicity of  $\rho$ , which is a function  $m_A(\bar{\rho})$  of the Hellinger type  $\bar{\rho}$  alone. By virtue of the fact that  $\bar{\rho}_\alpha \neq \bar{0}$ ,  $\bar{\rho}_\alpha \cap \bar{\rho}_\beta = \bar{0}$  imply  $m_A(\sum_{\alpha=1}^{\infty} \bar{\rho}_\alpha) = \min_{\alpha} m_A(\bar{\rho}_\alpha)$ , it follows that the function  $m_A$  has a very simple structure: the algebra  $R$  is the direct sum of subalgebras on each of which  $m_A$  is constant;

Source: Mathematical Reviews, 1948.Vol 1 O N 7

and  $m_A(\beta)$  is equal to  $\min_{\beta_n} m_A(\beta_n)$ , where  $\{\beta_n\}$  is the set of  $\beta$ 's components, other than 0, in the subalgebras in question. The function  $m_A$  is then seen to be a characteristic unitary-invariant of  $A$ : in fact,  $m_A(\beta) = m_B(\beta)$  for all  $\beta$  if and only if  $A$  and  $B$  are unitary-equivalent. To define generalized functions of  $A$ , it is supposed that a complex-valued function  $\Phi(\lambda, \beta)$  is defined for  $-\infty < \lambda < +\infty$  and  $\beta \in R$  when  $m_A(\beta) \neq 0$ , with the properties:  $\Phi(\lambda, \beta)$  is a function of  $\lambda$  measurable with respect to  $\rho$ ; if  $\beta \leq \sigma$  then  $\Phi(\lambda, \beta) = \Phi(\lambda, \sigma)$  except on a set of  $\rho$ -measure zero. Then there exists a unique closed linear operator  $B$  which is related to  $A$  in the following manner: if  $f$  is any vector and  $M(f)$  the closed linear manifold generated by the vectors  $E(\lambda)f$ ,  $-\infty < \lambda < +\infty$ , then  $M(f)$  reduces both  $A$  and  $B$ , their respective components  $A_f$  and  $B_f$  in  $M(f)$  being connected by the equation  $B_f = \Phi(A_f, \beta)$ , where  $\rho(\lambda) = (E(\lambda)f, f)$ . This operator is denoted by  $B = \Phi(A)$ . A necessary and sufficient condition that a closed linear operator be expressible in the form  $\Phi(A)$  is that it commute with every bounded linear operator which commutes with  $A$ . *M. H. Stone (Chicago, Ill.).*

Source: Mathematical Reviews, 1948, Vol 9, No. 1

*(Spru)*

ROKHLIN, V. A. Cand. Physicomath. Sci.

Dissertation: "Principles of the Theory of Transformation with Invariant Measure."  
Sci. Res. Inst. of Mathematics, Moscow Order of Lenin State U. imeni M. V. Lomonosov.  
17 Dec. 1947

SO: Vechernyaya Moskva. Dec. 1947. (Project #17836)

~~Rohlin, V.~~ **ROKHLIN, V. A.**

Rohlin, V. On the classification of measurable decompositions. Doklady Akad. Nauk SSSR (N.S.) 58, 29-32 (1947). (Russian)

Rohlin, V. On the problem of the classification of automorphisms of Lebesgue spaces. Doklady Akad. Nauk SSSR (N.S.) 58, 189-191 (1947). (Russian)

The author considers complete measure spaces  $M$  with measures  $\mu$  such that  $\mu(M)=1$ . If an object (e.g., a set, a function or a decomposition) is associated with each of two families of measure spaces, then the objects  $P$  and  $Q$  are "isomorphic" if there is a one-to-one, measurability and measure preserving transformation between corresponding spaces in the two families which (modulo sets of measure zero) carries  $P$  into  $Q$ . The "isomorphism type" of an object  $P$ , denoted by  $\tau(P)$ , is the class of all objects isomorphic to  $P$ .

A measure space  $M$  is a "Lebesgue space" if it contains a sequence  $S=\{D_n\}$  of measurable sets such that (a) the completion of the Borel field generated by  $S$  is the class of all measurable sets, (b) every two distinct points of  $M$  may be separated by sets of  $S$ , and (c) if, for each  $n=1, 2, \dots$ ,  $E_n=D_n$  or else  $E_n=M-D_n$ , then  $\alpha_n E_n \neq 0$ . If the (at most countably many) points of positive measure in a measure space  $M$  are arranged in a sequence so that their measures are nonincreasing, the measure of the  $n$ th such point is denoted by  $m_n(M)$ . A decomposition  $\xi$  of a Lebesgue space

is "measurable" if there exists a countable class of  $\xi$ -sets (i.e., sets which are unions of sets of the decomposition) by means of which any two sets of the decomposition may be separated.

The "factor space"  $M/\xi$  of a Lebesgue space by a measurable decomposition may be made into a (Lebesgue) measure space in a natural way, and a measure  $\mu_\xi$  may be defined on each set  $C$  of the decomposition so that the measure of every measurable subset of  $M$  is obtained by integration (over  $M/\xi$ ) of the  $\mu_\xi$ -measure of its intersection with  $C$ . If  $U$  is an automorphism of a Lebesgue space  $M$  (i.e., an isomorphism of  $M$  with itself), then there is a decomposition  $\xi_U$  of  $M$  into invariant sets  $C$  such that, for each  $C$ , the induced automorphism  $U_C$  is ergodic. [In connection with these last two results see Halmos, Duke Math. J. 8, 386-392 (1941); these Rev. 3, 50.]

In terms of the concepts defined above, the author's main results may be stated as follows. (1) The isomorphism type of the sequence  $\{m_n(C)\}$  of functions on  $M/\xi$  constitutes a complete set of isomorphism invariants of the decomposition  $\xi$ . (2) The function  $\Phi(C)=\tau(U_C)$  from  $M/\xi_U$  to the class of all (ergodic) isomorphism types constitutes a complete set of isomorphism invariants of the automorphism  $U$ . The author's presentation of both definitions and theorems is very condensed and somewhat unclear; there are no proofs.

P. R. Halmos (Princeton, N. J.)

Source: Mathematical Reviews, 1948, Vol 9, No. 5

*Sum*

ROKHLIN V.

PA 49T39

USSR/Mathematics - Automorphisms

Oct 1947

"Problem of Classifying Automorphisms of Lebesgue's Dimensions," V. Rokhlin, 3 pp

"Doklady Akad. Nauk SSSR, Nova Ser" Vol LVIII, No 2  
1947

Author makes use of terminology, calculations and results he used in work published in "Doklady Akad. Nauk SSSR, Nova Ser" Vol LVIII, No 1, 1947. Explains statement: the automorphism  $U$  and Lebesgue's dimension  $M$  is isomorphism of  $M$  on  $M$  itself. Submitted by Academician A. N. Kolmogorov, 12 Apr 1947.

49T39

Rohlin, V. A. On endomorphisms of compact commutative groups. *Izvestiya Akad. Nauk SSSR. Ser. Mat.* 13, 329-340 (1949). (Russian)

An endomorphism of a measure space  $X$  with measure  $\mu$  is a (not necessarily one-to-one) transformation  $T$  of  $X$  on itself such that, for every measurable set  $E$ ,  $T^{-1}E$  is measurable and  $\mu(T^{-1}(E)) = \mu(E)$ . (A nontrivial example is a continuous endomorphism of a compact group on itself.) In this paper the author (1) expounds the reviewer's results on automorphisms of compact Abelian groups [Bull. Amer. Math. Soc. 49, 619-624 (1943); these Rev. 5, 40], (2) defines a new measure-theoretic invariant of endomorphisms, avowedly designed to distinguish between spectrally equivalent automorphisms, and (3) proves, by a highly nontrivial algebraic technique, that the invariant is not strong enough to accomplish its original purpose. The new invariant is called  $r$ -fold mixing and the main theorem is that if an endomorphism of a compact Abelian group is nonperiodic (in the sense that the principal character of the group is the only one whose orbit is finite), then it is  $r$ -fold mixing. An endomorphism  $T$  is  $r$ -fold mixing if

$$\lim_{n \rightarrow \infty} \left( \bigcap_{i=0}^{n-1} T^i E_i \right) = \prod_{i=0}^{n-1} \mu(E_i)$$

whenever  $E_0, E_1, \dots, E_r$  are measurable sets and the sequence  $\{(k_0, k_1, \dots, k_r)\}$  consists of  $(r+1)$ -tuples of nonnegative integers with the property that

$$\lim_{n \rightarrow \infty} \min \{ |k_i^j - k_i^j| : 0 \leq i < j \leq r \} = \infty.$$

For  $r=1$ ,  $r$ -fold mixing reduces to the known concept of strong mixing.

*P. R. Halmos (Chicago, Ill.).*

*SMW*

Source: Mathematical Reviews.

V.2. No.

ROBLIN, V.A.

Roblin, V. A. On the fundamental ideas of measure theory. Mat. Sbornik N.S. 25(67), 107-150 (1949).  
(Russian)

Proofs of the author's results on decompositions of measure spaces [announced in Doklady Akad. Nauk SSSR (N.S.) 58, 29-32 (1947); these Rev. 9, 230]. P. R. Halmos.

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Source: Mathematical Reviews,

Vol 11 No. 1

ROKHLIN, V. A.

PA 153T71

USSR/Mathematics - Theory of Measure Sep/Oct 49

"Expansion of a Dynamic System Into Transitive Components," V. A. Rokhlin, Moscow, 15 pp

"Matemat Sbor" Vol XXV(67), No 2

History. Families of automorphisms and their types; measurable families; measurable isomorphism. Determination of type of automorphism according to its type of transitive components; canonical expansion; separation of periodic components and formulation of basic theorem; four lemmata; proof of basic theorem; conclusion. Submitted 15 Jul 47.

153T71

Doc Physicomath Sci

ROKHLIN, V. A.

"APPROVED FOR RELEASE: Tuesday, August 01, 2000

CIA-RDP86-00513R0014

Dissertation: "Concerning the Most Significant Metric Classes of Dynamic Systems."  
29/6/50

Mathematical Inst imeni V. A. Steklov, Acad

Sci USSR

SO Vecheryaya Moskva  
Sum 71

ROKHLIN, V.A.

Rohlin, V. A. Summary of results in homotopy theory of  
continuous transformations of a sphere into a sphere.  
Uspehi Matem. Nauk (N.S.) 5, no. 6(40), 88-101 (1950).  
(Russian)  
Expository lecture given at a conference on topology in  
May, 1950 at the Mathematical Institute of the Academy  
of Sciences of the USSR.

Source: Mathematical Reviews,

Vol 12 No. 7

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for

ROKHLIN, V. A.

4

Gurevič, A. A., and Rohlin, V. A. Approximation theorems  
for measurable flows, Izvestiya Akad. Nauk SSSR. Ser.  
Mat. 14, 537-548 (1950). (Russian)  
Detailed proofs of results announced earlier [Doklady  
Akad. Nauk SSSR (N.S.) 64, 619-620 (1949); these Rev.  
10, 549].  
P. R. Halmos (Chicago, Ill.).

Source: Mathematical Reviews,

Vol 12 No. 6

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page

ROKHILIN, V. A.

"Survey of Results of Homotopical Theory of Reflections of  $S^{n+k}$  Spheres into  $S^n$  Sphere," Usp. Mat. Nauk Vol. 6 No. 4 (14), pp 193-220, 1951.

U-1635, 16 Jan 52

ROKHLIN, V.A.

Rohlin, V. A. On a mapping of the  $(n+3)$ -dimensional sphere into the  $n$ -dimensional sphere. Doklady Akad. Nauk SSSR (N.S.) 80, 541-544 (1951). (Russian)

Let  $f: S^2 \rightarrow S^2$  be the Hopf map whose class generates  $\pi_2(S^2)$ . Let  $E^k f: S^{k+2} \rightarrow S^{k+2}$  denote the  $k$ -fold Freudenthal suspension of  $f$  and let  $g = E f \circ E^2 f \circ E^3 f: S^4 \rightarrow S^4$  be the composition map which consists of  $E^3 f: S^4 \rightarrow S^4$ , followed by  $E^2 f: S^4 \rightarrow S^4$ , followed by  $E f: S^4 \rightarrow S^4$ . Then the author asserts that  $g$  is inessential. This contradicts a result of the reviewer [see the preceding review] which has been confirmed independently by G. W. Whitehead and others. The argument given in this paper is geometrical and not detailed. The reviewer has not made a sustained attempt to detect a possible flaw.

P. J. Hilton (Manchester).

Source: Mathematical Reviews,

Vol 13 No. 7

ROKHILIN, V. A.

200

Rohlin, V. A. Classification of mappings of an  $(n+3)$ -dimensional sphere into an  $n$ -dimensional one. Doklady Akad. Nauk SSSR (N.S.) 81, 19-22 (1951). (Russian)  
The author asserts in this paper that  $\pi_4(S^2)$  is of order 6. The conclusion depends on that of an earlier paper by the author [cf. preceding review] and it appears to the reviewer that it is this dependence alone which explains the discrepancy between the author's value for  $\pi_4(S^2)$  and the conclusion, due to G. W. Whitehead and W. S. Massey [Bull. Amer. Math. Soc. 57, 191-292 (1951)] and others, that  $\pi_4(S^2)$  has 12 elements. Actually, it has been shown that  $\pi_4(S^2)$  is cyclic of order 12, since Barratt and Paechter [see the following review] have obtained an element of order 4. In fact, the arguments of this paper show that the factor group  $\pi_4(S^2) - E\pi_1(S^2)$ , where  $E$  is the Freudenthal suspension, is of order 6, and this conclusion is not in dispute.  
F. J. Hilton (Manchester).

8mm 221

Source: Mathematical Reviews,

Vol 13 No 7